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INTRODUCTORY LECTURE

DELIVERED IN

THE MEDICAL SCHOOL,

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# INTRODUCTORY LECTURE.

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GENTLEMEN,

IT is the business of the course of lectures, which I shall have the honor to deliver in this School, to instruct my pupils in the nature and treatment of all those ailments or diseases of the human body which come within the province of Medicine as distinguished from Surgery.

It may be that the crude notions you have formed of the Practice of Medicine lead you to consider it as little else than an empirical art, easy to be learned and not difficult to be exercised; as an art consisting only of specific receipts adapted to particular disorders cognizable at once by particular signs. Or you may have heard, from sources of commanding influence, that a knowledge of medicine is of secondary importance, that it comprises only an account of the leading features of the more common diseases, with instructions for the employment of some chief remedial agents; and that all besides is mere conjecture and mystery.

Reluctantly do I admit that too much cause has existed to foster such an opinion; for so devoid of established principles has medicine hitherto been that it can scarcely claim with propriety the rank of a science. In former times the want of an acquaintance with the structure and functions of the human body opposed an insu-

perable barrier to the successful study of disease, while, by giving scope and licence to the workings of the imagination, it allowed speculation and conjecture to assume the place of certain knowledge. Hence those hypothetical doctrines which have emanated from the various schools, and which have in turn distracted and enslaved the medical world, and in turn supplanted each other.

In our own times and in our own country, physicians, who have made the study and the practice of medicine the business of their lives, have, nevertheless, neglected the groundwork—*anatomy*; and surgeons, who have of necessity made themselves proficient in this department, have neglected, have slighted the study of disease; in this manner neither the physician nor the surgeon has been qualified to advance the science of medicine: and its advancement has, accordingly, been slow and little satisfactory. As regards physicians, indeed, their mother universities, whether English or Scotch, scarcely afford the means of anatomical proficiency; and it will be found that those graduates who have essentially contributed to our professional knowledge derived their anatomical attainments from other sources: instance Harvey who studied in Italy; instance Baillie, the father of British pathology, who, although a graduate of Oxford, was indebted for all his anatomical and pathological acquirements to the school of the Hunters: and I mistake not if those men of the present day, who give best promise of proving benefactors to our science, have not all received their fundamental knowledge in the schools of this metropolis. Not that by these remarks I mean to affirm that anatomy is taught in a pre-eminent manner in these schools; by no means; a regard to truth constrains me



to admit that much is wanted to render instruction in it complete, even consistent with the advanced knowledge of the present day. The deficiency, whatever it may be, will, however, soon be made up ; for the signs of the times give warning to teachers that they are expected to move forward with the pace at which science now strides on : and I have reason to hope that my colleague, who fills the chair of anatomy and who has been brought up in the anatomical schools of the sister kingdom, as you know justly celebrated, I say there is reason to hope that he will display the organization of the human body in a manner worthy to be called exemplary, and worthy of the present perfection of the science.

Reverting to the practice of physic, instruction in it is, generally speaking, lamentably defective ; a course of lectures being so limited as to comprehend little else than the consideration of fever and inflammation, of the phlegmasiæ and the exanthemata, and of a few of the more common chronic diseases, as diabetes, asthma, &c. ; thus passing over diseases of the mind altogether, as well as a long list of those important chronic affections which occur to every professional man daily, and which call for all his penetration to discover and all his judgment to relieve. Morbid anatomy itself is but cursorily taught in most schools, in some schools it is not taught at all, and physiological pathology has scarcely yet, in this country, found an expositor. Thus may the gorgeous fabric of medicine be said to be foundationless, to be erected on a shifting sand ; and little discernment is required to perceive that its present structure must crumble, is crumbling, and from its ruins and on a better base

there will arise a well-designed and more substantial edifice. This better base is morbid anatomy and physiological pathology ; and the more substantial edifice must be constructed on the exact and rigorous principles of the inductive philosophy.

This inductive or Baconian method, though acknowledged on every side to be the only true means by which science can be borne onwards, is yet in reality but little understood and less acted upon. Most men profess to be guided by it in conducting their researches and in founding their opinions ; but it is, in too many instances, profession only ; that mental process, which they call reasoning, being productive of little else than unsubstantial declamation. Before the mind can proceed to reason with profit, it must be stored with data, with materials upon which to work : else how can that reasoning be sound, that is not erected on a stable base. Men who have some reasoning powers with a vivid imagination are apt to exercise them prematurely, to begin to reason before they have acquired knowledge to reason upon, and hence the conclusions they arrive at are visionary and vague. ‘Such men are theorists who speculate much having observed little.’

To reason without knowledge is to reverse the order of nature. Long before the reasoning faculties are developed and matured, the child, even from infancy, is unceasingly busy in acquiring ideas, all new to him, and gathering them into the storehouse of his memory. The illustrious Locke, you know, has demonstrated that the human mind, in its early state, is not impressed with knowledge ; that it is indeed a blank ; that it is an exquisitely constructed but an unfinished edifice ; and



that all our ideas, instead of being innate, are acquired through the medium of the senses, the reporters of the mind, which place us in relation with the external world. Hence the first years of childhood exhibit an unceasing industry in the acquisition of ideas ; children manifest great anxiety to regard and touch whatever comes in their way. It is interesting to a contemplative mind to observe the working of that instinct which impels a child to examine with an eager and undivided attention every new thing that is presented to him ; to see him turn it about from side to side, to see him touch it, feel it, look at it with all his powers of observation, and then lay it aside to take up and examine something else. It is this irresistible propensity for the acquisition of new ideas, and not mere fretfulness, which causes a child to be soon tired of one plaything and to cry for another ; he wants new objects which can furnish him with new ideas. As years advance the reasoning faculties are developed, are superadded to those of observation, and the mind is then matured.

This analysis of the operations of the human mind offers an instructive lesson, not only in the discipline of childhood, but in the course you should pursue in the attainment of professional knowledge ; which course is, indeed, simply this ; to allow the acquisition of knowledge to precede the exercise of your reason ; or, in other words, not to begin to reason till you are in possession of matter to reason upon. The disregard of this simple rule, by persons of a speculative turn of mind, has been the source of many of those theories, which, proving to be ill-founded, have, by exciting distrust, tended to retard the growth of medical science. Theory, indeed, which

in its legitimate sense is the fruit of the exercise of our reason, of that noble faculty which places man at the head of the animal creation, is become a bye-word of mockery and contempt, and is confounded with hypothesis, speculation, conjecture.

The term theory, so much abused because misapplied and misunderstood, is the patient and sober reasoning on a complete series of facts : if we reason on a series which is not complete, which is defective even in one particular, then the result is not a theory, but an hypothesis, a speculation, a conjecture. There are but few men who have industry and opportunity, perception and observation to collect a sufficiency of correct *facts* on which to theorize, and fewer still are endowed with mental powers capable of reasoning on the good matter so collected ; for this capability requires not merely a natural contemplative power of mind, but habit of abstract thought to render that power available, to bring it into play. A mind which has the faculty of reasoning without the habit is like a noble horse that is unmanageable because he has not been trained ; or like a powerful and stupendous machine the movements of which the owner does not know how to regulate.

Men who scoff at theory are generally wanting in the power of reasoning, and therefore cannot appreciate its value. It may be they are men of observation, on which they rely for their professional competency ; but observation alone leads only to the accumulation of individual facts, which are not generally applicable and consequently of very limited utility. Persons are apt to complain of the want of facts, are apt to say register facts, while the truth is there are already more facts than are made use



of. Facts which are accumulated without reference to their relation, which are not assorted, combined, compared, reasoned upon in order to draw conclusions from them, are like the hoarded treasures of a miser, useless because unemployed. It is not by the industrious accumulation of facts that men acquire renown worthy of being transmitted to posterity. Men whose talent is limited to observation and power of memory, who pride themselves on being simply practical men, whatever may be their popular celebrity during life, have no renown beyond the tomb : their knowledge, their experience dies with them : in their hands medicine is but an art, an empirical art. ‘Art,’ you know, ‘is’ nothing more than ‘the application of knowledge to a practical end. If the knowledge be merely accumulated experience, the art is empirical ; but if it be experience reasoned upon and brought under general principles it assumes a higher character, and becomes a scientific art,’ a science. Was it the mere notice of the fact that valves existed in the veins and at the mouths of the arteries that led Harvey to the discovery of the circulation of the blood ? a discovery which forms a brilliant era in the history of medicine ! Was Harvey the only person who had seen these valves ? No ; but he was the first, who, having seen them, contemplated their use ; who, having observed that they permitted the transmission of the blood in one direction but opposed it in the other, was led to *infer* that, consistently with this arrangement, the blood in the arteries ought to flow from the heart, and that in the veins towards the heart ; which opinion experiment enabled him to verify and confirm. Was it any striking dexterity in sweeping off a breast or lopping off

a limb, that gave lustre to the name of Hunter? No; it was his contemplative mind, his power of reasoning on the materials furnished to him by his immense industry! Was it the manual dexterity of an artizan which procured for Mr. Abernethy a reputation which lives and will survive though the grave has closed upon him? No; it was the exercise of a reasoning mind superadded to an acute observation: this was the source of those peculiar opinions which will ever do honor to his name.

In reviewing the history of medicine from the earliest periods down to the present time one cannot but be struck with the lamentable uncertainty in which every thing pertaining to this science has been and is still enveloped. Well may we wonder that in the long period from Hippocrates to the nineteenth century so little has been established as certain, so little that can really be depended upon or made available with confidence in the treatment of disease. Young men may commence their career of practice full of confidence in their power to control and overcome disease; but after a few years of experience that confidence is shaken by doubt and succeeded by distrust and disappointment. It is a degrading, but nevertheless an incontrovertible truth, that medical science is at this time almost devoid of principles; and the practice of medicine rests on such an insecure base and is consequently exercised so generally at the discretion of unassisted individual judgment, that what with rashness on the part of some practitioners, and timidity, blind confidence and wild enthusiasm on the part of others, it becomes a question whether on the whole



there does not result to our fellow-creatures more harm than good from the exercise of our profession. It then becomes us to look into the causes which have retarded the progress of medicine and which have rendered its present state so full of imperfections, in order that, by profiting from the errors of those who have preceded us, we may trace out a fairer path for the direction and successful pursuit of our own labours.

The first cultivators of medical science, the fathers of physic, being of necessity unacquainted with the structure and functions of the human body, laboured under disadvantages which neither talent nor industry could overcome. The want of elementary knowledge left them no resource but observation by which to make themselves acquainted with disease, and, in so far as observation goes, their works afford us specimens of admirable skill in this particular. Take, for example, the description of the face of a dying man by Hippocrates, the *facies Hippocratica*, which has never been surpassed since his time, and which we in our practice daily recognize as the harbinger of death. Now *observation* is the fruit of the direct exercise of our senses on whatever is presented to them, and there is no reason why the observations of men in the infancy of science should not have been as correct, as exact as at any later period. Hippocrates could as well become acquainted with the cold, the hot, and the sweating stages of an intermittent fever, as any physician of the present day; so also could he note the history of diseases, as the manner and periods of their invasion, formation, height and decline: and it was from observation of the most assiduous and persevering cha-



racter that he endeavoured to recognize critical signs and critical days. Observation then was the earliest method of attaining knowledge in medicine.

In addition to observation was another means also, *experiment* ; by which the properties of remedial agents were made manifest, and their effects measured and ascertained. The employment of blood-letting was to all intents and purposes at first experimental, as was the administration of drugs ; and it is to experiment and observation that all the knowledge of the ancients which is valuable is to be attributed. The knowledge thus gained, indeed, constitutes the sum of their experience.

‘*Experience*,’ as analyzed by the exact and scientific mind of Sir John Herschel, ‘is the fruit of observation and experiment, and may be acquired in two ways : either, first, by noticing facts as they occur, without any attempt to influence the frequency of their occurrence, or to vary the circumstances under which they occur ; this is *observation* : or, secondly, by putting in action causes and agents over which we have control, and purposely varying their combination and noticing what effects take place ; this is *experiment*.’

Had physicians been content with the knowledge afforded by their experience, the records of medicine would at least have been free from all those absurd and flimsy hypotheses, with which whatever was valuable is so blended and obscured as to be of little use in after times. But the mind of man is restless, is impatient of doubt, and, rather than remain unsatisfied, it will think and endeavour to penetrate into the causes of things. Hence, in all ages, physicians have reasoned on the nature and causes of disease, and the reasoning of great minds on

defective and scanty knowledge, the deficiency in which has been supplied by the imagination, has given birth to speculative systems, which, in proportion as they were plausible and supported by the authority of an imposing name, gained the ascendancy and, for a time, subjugated men's minds. The age of speculation is, in truth, not yet gone by; for, even in this boasted period of intellectual improvement and excellence, novelty retains its charms, enthusiasm is sure of its advocates and admirers, and empirical fraud and impudent assertion seldom fail to impose on the credulity which seems inherent in mankind.

It is proper that I should now proceed to lay before you the arrangement which I propose to adopt in this course of lectures, and the plan of instruction which appears to me best calculated to put my pupils in possession of a knowledge of the Principles and the Practice of Medicine. In determining this plan and in forming this arrangement I have not forgotten to recur to the period of my own early studies, and to analyze the difficulties, still fresh in my recollection, which I myself encountered; in order that, by discovering how far they depended upon my teachers, I may now correct and discipline myself accordingly, and so smooth and make clear for you the rough and thorny paths of instruction and of knowledge. On a general principle I cannot proceed in a more satisfactory manner than in following the precepts of Condillac framed for his own guidance as an instructor; which are, to avoid prolixity because it fatigues the mind, digressions because they distract it, too many di-



visions and subdivisions because they embarrass it, and repetitions because they weary it.

In the early part of the course I shall present to you a brief sketch of the structure of the human frame, and of that beautiful organism which is to be the theatre for the exercise of your judgment and of your professional skill. Not that I shall do this with any view to furnish you with anatomical and physiological instruction, but to recall to your minds some particulars relating to the associations and sympathies of the various sets of organs, and of the peculiarities of the organic and of the animal life; which should ever be present to the pupil in his studies and to the physician in his practice.

Having surveyed the living man in a state of health, we shall proceed to consider how this natural health is interrupted and disordered by the enjoyments, the excesses, the cares, the duties, the labours of social life; how these causes act first in inducing trivial disorder which leads to lasting disease: how a body thus diseased begets a less vigorous offspring, and how thus family or hereditary predisposition is engendered. Next, how those disorders which spring from the moral influence of organized society affect the nervous system more especially; and how, for this reason, the aspect and the nature of disease generally is modified and varied. The influence of civilization on the health presents a subject of inquiry of immense interest in the science of medicine; an inquiry which will go far to explain the predominance of nervous disorders, and the progressive increase of affections of the mind.

Regarding the body again in a state of health and ex-



posed to the action of external, accidental, or physical causes, as sudden vicissitudes of the weather, we shall see how organic inflammations are suddenly established, and how in these the sanguiferous system is prominently affected; in contradistinction to those disorders before alluded to, which implicate the nervous system particularly.

Now all these disordered actions are indicated by signs or symptoms, some common, some peculiar; as by various kinds of pain, by varieties of the pulse, by varied temperature of the skin, and various states of the tongue and so on; which I shall instruct you how to appreciate and value.

In the next place I shall explain to you the nature of those diseased actions which are the universal agents of organic change; and then pass on to consider the characters which the various organic lesions, the products of these diseased actions, present in common, whether as regards their form, their intimate nature, or their mode of production—and thus give you a comprehensive view of general pathological anatomy.

Having then furnished you with an account of disease generally, your attention will be directed to special disease, that is, individual disease, of which the organic inflammations are the most simple forms: but instead of going through the order of acute inflammations, the plegmasiæ of Cullen, in rapid succession as the custom has long been, I shall, after having treated of the acute inflammation of an organ, take up the subacute and chronic diseases to which the particular organ is liable, thus completing the diseases of one organ before passing on to the diseases of another, and so preserve the natural

relations between acute, subacute and chronic diseases : a point of real moment seeing that the chronic forms of disease originate not unfrequently in the acute and subacute. Nothing for example is more common than for an acute inflammation of the liver to terminate in a chronic inflammation, this again to induce induration of the liver, and this again dropsy of the belly ; so that the ascites, the induration and the chronic hepatitis, though consequent on each other, originated in the acute inflammation of the organ. It is therefore not advisable to treat of these various affections of the same organ in separate parts of the course.

The order in which these organic inflammations and diseases will be considered is not material further than as relates to their several classes or associations, the individual organs of which it will be essential to treat of in succession ; as the individual organs of digestion ; of urine ; of generation ; of the circulating system ; of respiration ; of the nervous system.

The propriety of this arrangement few will be disposed to question ; morbid anatomy is as essential to the physician as the anatomy of the sound body is to the surgeon : without the one the surgeon would have no guide to direct his knife ; without the other the physician would have no guide to a knowledge of disease.

Chronic diseases too, although not violent like the acute inflammations, are not the less destructive. Insidious in their approach, and slow and unobtrusive in their progress, they undermine the constitution often before their existence is suspected, and thus cut short human life : or, they determine organic lesion to a degree, which although not absolutely inconsistent with



life, so shatters the constitution, so disables the body as to render the remaining years of its victim a course of painful pilgrimage.

The frequency and duration of chronic diseases is a sufficient reason why they should engage a share of our attention. Difficult to discover in the early stages and at all times difficult to treat, they call for our greatest vigilance to detect them, and the most judicious and persevering treatment to arrest and eradicate them. Unlike the acute diseases they are not to be overcome by violent and hasty measures ; but by means gradual in their operation, moderate yet efficient and well directed. It is not enough that you should learn what it is in the power of medicine to accomplish, but also what it cannot accomplish. Great and irreparable mischief occurs from attempting too much in the treatment of chronic diseases : who, that has experience, has not witnessed the ravages of mercury injudiciously, wantonly administered ; and the destructive effects of blood-letting indiscreetly, rashly employed ?

Diseases of the mind, as they are usually but not correctly denominated, have as yet formed no part of general medical education : but why they should have been passed over it is not easy to conceive, unless our profound ignorance of them be alleged as an excuse for the omission.

Diseases of the mind, or, more correctly speaking, those functional derangements and diseased conditions of that material organ the brain which disturb and permanently derange the manifestations of the immaterial mind, have of late derived an importance from the in-



terest with which they have been regarded by the public ; an importance which will involve that best of all inducements, a necessity in medical men, to become acquainted with them. The tribunal of public opinion, and the professional ruin consequent on public displeasure, will oblige men to be less incautious in consigning their fellow-creatures to the confinement of a madhouse, on the plea or suspicion of insanity ! Are not the functions of the brain like the functions of the other organs of the body liable to be disturbed, to be disordered ; and is not disordered function in this organ capable of being corrected as disordered function in another ? Yes certainly ! Do we not see the delirium of fever terminate, and the manifestations of the mind be again restored in all their pristine perfection and energy ? Do we not see puerperal mania pass away and leave the intellectual faculties unimpaired, entire ? Do not these facts convince us of the propriety of placing disorders of the brain on the same footing as disorders of the other viscera, some of which arise from disturbance of function and are remediable ; others from organic lesion and are permanent ?

It is one of the remarkable instances of the sound judgment and rare sagacity of our immortal countryman, Bacon, that he foresaw and broadly announced his belief that ‘ of disorders of the mind, the absolute source, if ever fully developed, will be found to exist in corporeal changes, or the effects of external agents acting on the gross machine, and not primarily on the immaterial principle, as has, unfortunately for the subjects of disease, been too commonly apprehended.’ Had this opinion received due attention it would have given a direction to the study of diseases of the mind, which would have dis-

pelled the mysterious darkness which has hung over them ; and have obviated the ignorance which this branch of medical science has still to deplore. The treatment of affections of the mind has gone little farther than the mere safe custody of the individuals afflicted ; for notwithstanding men of education and of ability have made it their business to attend expressly to these affections, they have not given to the public any proofs by publication or otherwise, that they have made the anatomy, physiology, and pathology of the brain their particular study ; or, in fact, that, with some honourable exceptions, they have displayed any other character than that of keepers, or guardians of the insane.

I trust, Gentlemen, that the critical remarks which have fallen from me on the imperfection of medical science and medical instruction will not appear to you in the repulsive garb of illiberality : they have been made, as far as my own feelings are concerned, in the pure spirit of an humble though ardent cultivator of our science ; and have originated in a desire to ascertain and to disclose the errors and defects of medicine, with a view solely to their rectification and improvement. At this juncture it would ill become me to cast reflections on the acquirements of others, seeing that I shall too frequently have occasion to crave indulgence at your hands : but it is an axiom universally admitted that the first most essential step towards the advancement of a science is to discover and bring to light its inaccuracies and imperfections.

Now the causes of the slow and unsatisfactory advance of Medical Science depend, in part, on difficulties pecu-



liar to it; arising from the various and ever-varying shades, degrees, and combinations of disease, functional and organic; and of the impracticability of appreciating with exactness or measuring with accuracy the value of the signs or symptoms by which they are indicated. Take for example the pulse. What two physicians will agree upon the characters of the pulse? What physician is there, however great his experience, that does not witness daily combinations of symptoms, modifications of disease which are new to him? and was his life prolonged indefinitely and his experience multiplied in proportion, his increase of knowledge would only teach him humility of pretension, by shewing him how much he has still to learn. We may from this truth be assured, that whoever relies on mere experience for his power of treating disease, will be *constantly* at a loss. It is to general principles that we must look for a sure guide; and the establishment of these will form the next grand era in the Science of Medicine.

General Principles are axioms derived from the consideration and comparison of particular facts; thus Mr. Abernethy from having observed in a great many cases that local disease was attended and often long preceded by disorder of the digestive organs, and that by correcting this disorder the local diseases were in some instances cured, and in others alleviated, he arrived at the great general principle, that disorder of the digestive organs was capable of producing local disease, and always of aggravating it: a principle now universally acknowledged and adopted, much to the honor of its founder.

Again, it having been observed on a large scale, and ascertained by a great number of individual facts, that in



some diseases, the nervous system, in others, the sanguiferous system is prominently affected; that, in those diseases in which the nervous system is affected, blood-letting does little good and often much harm, while in those diseases in which the sanguiferous system is affected, as in the organic inflammations, blood-letting is not only beneficial but indispensable; I say these facts having been ascertained, we arrive at the great general principle that blood-letting is not only not advisable but injurious in nervous diseases while it is highly beneficial and necessary in diseases in which the sanguiferous system is mainly implicated. With a knowledge of this important principle, and with a further knowledge of the signs which distinguish the affections of the nervous from those of the sanguiferous system, who is the practitioner that would now commit the error of immoderate blood-letting in tetanus, a disease of the nervous system: while without this knowledge his practice would be hap-hazard, dangerously experimental, for many are the cases of tetanus in which the lancet has gone hand in hand with the disease in exhausting and extinguishing the powers of life.

In the arrangement which has been detailed it is apparent that I have not adopted any nosological system or classification; which departure from the usual custom I have ventured upon, not from any vain desire of novelty but to avoid the restraints of systems and the errors and prejudices which are inseparable from them. But let me not be understood as detracting from the merits of the authors of nosology, who have shewn themselves to be men of superior talents and acquirements, and who have secured to themselves a reputation which I am

ready to acknowledge and to respect. The errors belong to the systems not to their founders ; for in the unsettled state of medical opinions on the seat and nature of some diseases, it was impossible to arrange them in any manner that is not objectionable—and might prove to be incorrect. A student for example in looking over the nosology of Cullen will find that Pertussis or Hooping-Cough is placed in the order Spasmi of the class Neuroses, from which he would naturally conclude that hooping-cough is a spasmodic nervous disease, and his mind leaning to this opinion, may become prejudiced to it : whereas by pathological anatomy I shall demonstrate to you that the essence of this disease is not spasm but inflammation and that pneumonic inflammation constitutes its only danger and is the cause of its frequent fatal termination. Other examples might be adduced from the same Order, if it was necessary ; for instance, Diabetes and Asthma ; which will be shewn to depend upon other causes than Spasm ! Notwithstanding the imperfections of this nosology Cullen was unquestionably a great man, and setting aside his doctrines and speculations, which however shew great powers of mind, his first lines of the Practice of Medicine evince a profound acquaintance with disease, and contain a fund of useful information.

In the progress of these lectures it will be my constant aim to instruct you on the principle of Physiological Pathology, which will explain to you the nature and consequences of those impaired functions which result from diseased action and organic lesion. For instance ; it is common to find hæmorrhage from the bowels supervene



on a particular disease of the liver, which is satisfactorily explained by a reference to physiological pathology. You know that in the healthy state there is an immense circulation of venous blood through the liver; that the blood returned from the alimentary canal and from the spleen instead of being conveyed direct to the vena cava is transmitted through the liver by the vena portæ for the secretion of bile. Hence, in the particular indurated state of the liver alluded to, the passage of this blood through it is obstructed and there ensues a vast congestion in the portal system; the consequence of which is that the veins of the mesentery and the *capillary* veins of the intestines become so gorged as eventually to induce an effusion of blood from them into the intestinal canal; thus causing the hæmorrhage. The principle of physiological pathology is the only method by which you can obtain a rational insight into the nature of disease; the only method by which you can learn how disease of one organ leads of necessity to disorganization of another associated with it; and how this further disorganization affects the system at large and induces other affections which, without the aid of physiological or true pathology, you would not be capable of tracing to their proper source, or of referring to their proper place of dependence and relation.

It only remains for me, Gentlemen, to offer you a word of admonition on the manner in which your studies should be prosecuted and your general conduct regulated.

Before all things I would have you observe an uninterrupted regularity in attendance upon your lectures



and Hospital or Dispensary Practice, these being the sources from which you are to derive your professional acquirements during the period of your studies. From what you hear and see select and note down whatever strikes you as being good and useful; for the memory is treacherous, and by trusting too much to it, your knowledge will be vague instead of being precise; remember that ‘writing maketh an exact man.’ Acquire also the habit of abstracting your mind from every object but the one about which it is engaged; concentrate its powers on this, and then you will understand what you learn, because you will thus learn to reason as you work. Receive with respect opinions that come from a respectable authority; and although I should advise you not to surrender your judgment blindly and slavishly but to think for yourselves, still it is incumbent on you to have good reasons for doubting as well as for believing. This maxim is particularly applicable at your period of life, because ‘the early efforts of the mind like the first exercises of the bodily powers, are feeble and irregular, running counter to the most sacred and best established convictions, and doubting of every thing but the competency of its own powers, and the soundness of its own decisions.’ I state these things not to discourage you, but to invite you to control with care and to direct with judgment the mental ardour peculiar to your age.

I would further advise you not to devote too much time to books, the information they afford being too diffuse to be at this period useful to you. Your reading should be limited to elementary works, which you will take up as books of reference, rather than for the purpose of general reading. I account it a very great error

in young persons to study books too intently, it prevents them forming opinions for themselves, and so causes them to become ‘too curious and irresolute by variety of reading.’ A course of reading will be a very fit employment for you when you have concluded the elementary studies in which you are now engaged.

For the regulation of your general conduct I cannot give you more appropriate advice than will be furnished by a short extract from the *Citizen of the World*; ‘You are now,’ observes Goldsmith, ‘arrived at an age when pleasure dissuades from application; but rob not, by present gratification, all the succeeding period of life of its happiness. Sacrifice a little pleasure at first to the expectance of greater. The study of a few years will make the rest of life completely easy.’

THE END.

